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INTEROFFICE CORRESPONDENCE

DATE: October 12, 1993

TO: T. C. Greengard, Environmental Engineering & Technology, Bldg. 080, 6959

FROM: R. E. Madel, Environmental Engineering & Technology, Bldg. 080, X6972

SUBJECT: SAMPLING DISCREPANCIES AT THE OU 2 SURFACE WATER INTERIM MEASURE/INTERIM REMEDIAL ACTION FIELD TREATMENT UNIT - REM-013-93

On August 19, 1993, EG&G discovered a sampling discrepancy at the Operable Unit 2 Surface Water Interim Measure/Interim Remedial Action (SW IM/IRA) Field Treatment Unit (FTU) (memorandum TCG-169-93). EG&G notified DOE, EPA and CDH of the discrepancy at the beginning of September 1993 (memorandum TCG-170-93). As a result of this sampling discrepancy, N. M. Hutchins directed Environmental Quality Support (EQS) to perform an audit of the sampling program at the OU 2 FTU. The audit, or informal quality assessment, was performed, and a summary was prepared by Steve Luker of EQS (memorandum RSL-004-93).

The assessment evaluated the sampling locations and methodologies associated with the OU 2 SW IM/IRA Treatability Study Report (TSR). The assessment determined that sampling in two locations did not produce a representative sample that met the needs of the IM/IRA Treatability Study. Treatability Study sample RS-1 was designed to characterize influent to the FTU. This sample was collected in a manner that was not consistent with established surface water sampling procedures. To characterize a culvert that drained into South Walnut Creek, sample location SW-132 was established. The actual, physical location of this sample was never clarified with the Surface Water Sampling Program and the sample was collected in a location that did not meet the needs of the (TSR). EG&G notified DOE of the discrepancy (TCG-172-93) and DOE notified EPA and CDH that day. The Field Sampling Plan (FSP) did not address the needs of the SW IM/IRA with respect to the surface water sampling program. Both of these sampling discrepancies occurred because a Finalized Field Sampling Plan (FSP), which coordinated all sampling activities for the FTU, was not in place.

The data obtained from sampling at RS-1 is not considered reliable; however, the unreliability of this data does not impact the conclusions of the TSR with respect to characterizing the FTU. The sampling location has been eliminated since the surface water sampling program already samples the surface water sources that are influent to the FTU.

The data obtained from SW-132 is also not reliable since it is not clear exactly how and where the sample was collected. The physical location of the sample changed as site conditions and sampling crews changed. The unreliability of this data does impact the conclusions of the TSR since one of the conclusions was to discontinue collection and treatment of SW-132.

EG&G accompanied Jacobs Engineering (the current Surface Water Sampling Program subcontractor) and Surface Water representatives to the site and discussed with Jacobs how was being performed. The sampling needs of the SW IM/IRA were explained and the locations of the surface water samples were clarified (REM-011-93). Remediation Project Management (RPM) requested that the culvert location be sampled daily for 14 days. A rush turn around time was requested for the sample results. At this time, seven days of data have been received and are attached (Attachment A). The data indicate that the culvert water has the following water quality:

VOCs	all values below detection limits
Dissolved metals	all values below ARARs
Total metals	occasional detections above ARARs
Radionuclides	occasional detections above ARARs

The existing, controlled Field Sampling Plan for the FTU will be modified to reflect the current needs of the IM/IRAP. Sampling plans based on several operating scenarios have been developed. The first scenario addresses sampling needs for the FTU under the assumption that the TSR is completed. The second scenario assumes the TSR is on-going. Formal changes will be made upon determination by RPM that the TSR is either complete or on-going. The FSP is being rewritten by FOM.

Please contact me at X6972 if you have any questions or concerns. Thank you.

REM:cet

Attachment:
As Stated

cc:
S. T. Barros
S. Luker
A. L. Primrose
M. T. Vess

Administrative Record

Surface Water Sampling at the Culvert at South Walnut Creek (formerly SW-132)

RADIONUCLIDES

	GROSS ALPHA	GROSS BETA	PU-239	AM-241	TRITIUM	STRONTIUM	U-TOTAL
UNITS	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
ARAR	11	19	0.05	0.05	500	8	10
DET. LIMIT	N/R	N/R	N/R	N/R	N/R	N/R	N/R
DATE							
9/7/93	N/R	N/R	0.017	0.015	N/R	0.239	4.225
9/8/93	4.787	3.433	0.002	0.149	N/R	0.08	5.396
9/9/93	3.57	4.014	0.008	0.007	N/R	-0.013	6.269
9/10/93	4.698	2.507	0.007	0.004	N/R	0.257	6.913
9/11/93	3.315	4.993	0.007	0	N/R	0.133	7.305
9/12/93	2.481	2.602	0.0026	0.009	N/R	0.071	7.54
9/13/93	5.268	9.64	0.045	0.052	N/R	0.046	0.857
9/14/93	2.375	3.739	0.011	0.004	N/R	0.164	4.456
9/15/93	5.233	5.342	0.013	0.014	N/R	0.204	5.997
9/16/93					N/R		
9/17/93					N/R		
9/18/93					N/R		
9/19/93					N/R		
9/20/93					N/R		

Surface Water Sampling at the Culvert at South Walnut Creek (formerly SW-132)

TOTAL METALS

	ALUMINUM	ARSENIC	BARIUM	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	IRON	LEAD	MANGANESE	MERCURY	NICKEL	SELENIUM	ZINC
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
ARAR	240	50	1000	100	<5	10	25	1000	5	1000	0.2	40	10	50
DET. LIMIT	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
DATE														
9/7/93	466	2.6 B	93.8 B	1 U	4 U	3 U	5.8 B	800	1.6 B	24.8	0.2 U	7 U	2.9 B	90.7
9/8/93	93.6 B	2.5 B	105 B	1 U	4 U	3 U	2.6 B	471	1.0 U	17.4	0.2 U	7 U	3.7 B	70.4
9/9/93	15 U	2.1 B	119 B	1 U	4 U	3 U	2.0 U	325	1.0 U	12.6 B	0.2 U	7 U	4.3 B	35.1
9/10/93	97.4 B	1.8 B	118 B	1 U	4 U	3 U	2.7 U	420	1.0 U	16.7	0.2 U	7 U	4.5 B	57.7
9/11/93	36.4 B	1.4 B	125 B	1 U	4 U	3 U	2 U	304	1.0 U	10.3 B	0.2 U	7 U	4.8 B	36.1
9/12/93	27.5 B	1.7 B	129 B	1 U	4 U	3 U	2 U	446	1.0 U	9.9 B	0.2 U	7 U	5.2	34.5
9/13/93	2740	3.0 B	46.2 B	1 U	4 U	3 U	8.9 B	3700	7.2	139	0.2 U	7 U	1 U	194
9/14/93	121 B	2.9 B	94.2 B	1 U	4 U	3 U	5.8 B	522	1.1 B	25.2	0.2 U	7 U	2.5 B	82.2
9/15/93	59.7 B	3.4 B	113 B	1 U	4 U	3 U	2.4 B	510	1 U	16.9	0.2 U	7 U	3.4 B	80.8
9/16/93	15 U	2.1 B	124 B	1 U	4 U	3 U	2 U	254	1 U	11.7 B	0.2 U	7 U	3.5 B	33
9/17/93	34.7 B	1.8 B	128 B	1 U	4 U	3 U	2 U	333	1 U	13.1 B	0.2 U	7 U	3.7 B	31.4
9/18/93	874	4.7 B	87 B	1 U	4 U	3 U	8.3 B	1170	2.7 B	25.9	0.2 U	8.1 B	1.6 B	106
9/19/93	52.2 B	1.7 B	111 B	1 U	4 U	3 U	2.1 B	339	1 U	15.2	0.2 U	7 U	2.6 B	54.2
9/20/93	176	1.8 B	122 B	1 U	4 U	3 U	2 U	186	1 U	11.2 B	0.2 U	7 U	3.6 B	32.3

Surface Water Sampling at the Culvert at South Walnut Creek (formerly SW-132)

VOLATILE ORGANIC CARBONS

	1,1-DCE	CHLOROFORM	CARBON TET.	PCE	TCE	VIN. CHLOR.
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
ARAR	7	1	5	1	5	2
DET. LIMIT	5	5	5	5	5	10
DATE						
9/7/93	5 U	5 U	5 U	5 U	5 U	10 U
9/8/93	5 U	5 U	5 U	5 U	5 U	10 U
9/9/93	5 U	5 U	5 U	5 U	5 U	10 U
9/10/93	5 U	5 U	5 U	5 U	5 U	10 U
9/11/93	5 U	5 U	5 U	5 U	5 U	10 U
9/12/93	5 U	5 U	5 U	5 U	5 U	10 U
9/13/93	5 U	5 U	5 U	1 IJ	5 U	10 U
9/14/93	5 U	5 U	5 U	5 U	5 U	10 U
9/15/93	5 U	5 U	5 U	5 U	5 U	10 U
9/16/93	5 U	5 U	5 U	5 U	5 U	10 U
9/17/93	5 U	5 U	5 U	5 U	5 U	10 U
9/18/93	5 U	5 U	5 U	5 U	5 U	10 U
9/19/93	5 U	5 U	5 U	5 U	5 U	10 U
9/20/93	5 U	5 U	5 U	5 U	5 U	10 U

Surface Water Sampling at the Culvert at South Walnut Creek (formerly SW-132)

DISSOLVED METALS

	IRON	MANAGESE
UNITS	ug/L	ug/L
ARAR	300	50
DET. LIMIT	N/R	N/R
DATE		
9/7/93	21.3 B	8.5 B
9/8/93	33.7 B	12.4 B
9/9/93	38.7 B	8.0 B
9/10/93	7 U	6.1 B
9/11/93	7 U	5.4 B
9/12/93	7 U	5.9 B
9/13/93	68.2 B	20
9/14/93	162	20.6
9/15/93	7.0 U	13.7 B
9/16/93	7.0 U	10.0 B
9/17/93	10.9 B	9.4 B
9/18/93	40.5 B	15.1
9/19/93	7 U	12.8 B
9/20/93	7 U	10.0 B